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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,035	11/01/2001	Jeffrey W. Carr	CARR-01000US1	5043
23910	7590	01/13/2006	EXAMINER	
FLIESLER MEYER, LLP			OLSEN, ALLAN W	
FOUR EMBARCADERO CENTER				
SUITE 400			ART UNIT	PAPER NUMBER
SAN FRANCISCO, CA 94111			1763	

DATE MAILED: 01/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/002,035	CARR, JEFFREY	
	<b>Examiner</b>	<b>Art Unit</b>	
	Allan Olsen	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 31 May 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 3-15,18-21,32,37,39,41,42,44-60,62,64 and 66 is/are pending in the application.
  - 4a) Of the above claim(s) 41,42,46,50,54 and 58 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 3-15,18-21,32,37,39,44,45,47-49,51-53,55-57,59,60,62,64 and 66 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 09 May 2002 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.
 

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ .
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>12/02/05</u> .	6) <input type="checkbox"/> Other: _____ .

## **DETAILED ACTION**

### ***Allowable Subject Matter***

Upon further consideration of the Zarowin et al. reference (Rapid, Non-Contact, Damage Free Shaping of Optical & Other Surfaces With Plasma Assisted Chemical Etching, 43<sup>rd</sup> Annual Symposium on Frequency Control 1989, pp.632-626) the indicated allowability of the claims is withdrawn. This reference was applied in the Office action mailed April 25, 2003. In response to applicant's arguments filed August 11, 2003 the rejection was dropped. However, the examiner now believes the rejection should have been maintained. Many of the claims now pending also read on the teachings of Zarowin. This action will be made non-final and the examiner apologizes for this unfortunate development.

### ***Claim Objections***

Claims 48, 49 and 51 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claims, or amend the claims to place the claims in proper dependent form, or rewrite the claims in independent form. These claims recite:

“The method...operable on one of a conductive surface, a non-conductive surface and a semiconductor surface.”

The options for surface conductivity that are made available by these claims would seem to include the entire spectrum of possibilities with regard to surface conductivity and therefore the claims do not appear to further limit the base claims. The examiner notes that withdrawn claim 50 is analogous to each of the objected to claims.

***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**Claims 3, 5-12, 18, 20, 21, 32, 37, 39, 44, 45, 47-49, 51-53, 55, 60, 62, 64 and 66 are rejected under 35 U.S.C. 102(b) as being anticipated by Zarowin et al. in Rapid, Non-Contact, Damage Free Shaping of Optical & Other Surfaces with Plasma Assisted Chemical Etching, 43rd Annual Symposium on Frequency Control 1989, 623-626 (hereinafter, Zarowin).**

As the title of the paper indicates, Zarowin teaches using a reactive atom plasma to provide a damage free and contamination free, shaped optical surface. Because the annulus center of Zarowin's annular plasma is continually supplied with a reactive species such as CF<sub>4</sub> and SF<sub>6</sub>, Zarowin is considered to teach "injecting a flow of a species into the annulus center of the annular plasma to create at least one reactive species". Zarowin teaches controlling the flow of plasma gases to adjust the balance between etching and deposition processes. See: figures 1, 2 and 9; also, the 2<sup>nd</sup> and 4<sup>th</sup> paragraphs on page 623 and the 1<sup>st</sup> paragraph on page 624.

***Claim Rejections - 35 USC § 103***

**Claims 3-12, 19-21, 32, 37, 39, 44, 45, 47-49, 51, 60, 62, 64 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bollinger et al. in "Rapid, Non-Contact Optical Figuring of Aspheric Surfaces with Plasma Assisted Chemical Etching (PACE)" in SPIE Vol. 1333 page 44-57 (hereinafter, Bollinger) in view of Zarowin.**

As the title of the paper indicates, Bollinger teaches using a reactive atom plasma to shape aspherical optical surfaces. Bollinger teaches supplying the plasma reactive species such as CF<sub>4</sub> and SF<sub>6</sub>. Bollinger teaches removing damage introduced by previous process steps. See: pages 44, 4546, 47, 51, 52 and 57.

Bollinger does not teach an annular plasma.

Zarowin teaches an annular plasma.

It would have been obvious to one skilled in the art to provide or "inject" the reactive species to the center of an annular plasma because it is readily apparent that the system and process of Bollinger is essentially the same as that of Zarowin and Bollinger's complete silence with regard to the plasma footprint suggests that any of the possible footprints taught by figure 2 of Zarowin are applicable to the process of Bollinger.

**Claims 13-15, 56, 57 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bollinger in view of US Patent 5,961,772 issued to Selwyn, and further in view of US Patent 6,068,784 issued to Collins et al. (hereinafter, Collins).**

The above noted teachings of Bollinger are herein relied upon.

Bollinger does not teach using Ar. Bollinger does not teach operating near atmospheric pressure.

Selwyn teaches that the provision of a high flow rate of argon enables one to carry out a process similar to that of Bollinger's at atmospheric pressure rather than at the low pressure taught by Bollinger. For example, Selwyn teaches etching SiO<sub>2</sub> with a

Art Unit: 1763

room temperature, atmospheric pressure plasma wherein the plasma gases comprise CF<sub>4</sub> and Ar.

It would have been obvious to one skilled in the art to add argon to Bollinger's CF<sub>4</sub> or SF<sub>6</sub> plasma torch etching of SiO<sub>2</sub> because Selwyn teaches that this enables the use of atmospheric pressure which greatly simplifies the operational demands of the process and Selwyn demonstrates that etch rates for process carried out at atmospheric pressure are greater than those carried out under a typical low pressure condition.

Bollinger and Selwyn do not teach using C<sub>2</sub>F<sub>6</sub> to etch SiO<sub>2</sub>.

Collins teaches using C<sub>2</sub>F<sub>6</sub> to etch SiO<sub>2</sub>.

It would have been obvious to one skilled in the art to use C<sub>2</sub>F<sub>6</sub> in place of CF<sub>4</sub> to etch SiO<sub>2</sub> because Collins teaches that CF<sub>4</sub> and C<sub>2</sub>F<sub>6</sub> are functionally equivalent as a fluorocarbon etchant of SiO<sub>2</sub>.

### ***Response to Arguments***

Applicant's arguments with respect to Zarowin that accompanied the response mailed August 11, 2003 have been reconsidered and are not persuasive.

Applicant argues, that the claims have been amended to recite "injecting a flow of reactive species into the annulus of an annular plasma" and that Zarowin does not disclose such a limitation. Applicant states that Zarowin cannot anticipate the claims because Zarowin "does not disclose a flow of reactive species that is separate from the plasma, the injecting of a gas into the plasma, or the injecting of a gas into the annulus of a plasma".

Claim 3, for example, now recites "injecting a flow of a species into the annulus center of the annular plasma". After applying the broadest reasonable interpretation to this claim language (e.g., "injecting a flow" = "providing"), the examiner is not of the opinion that this claim "requires a flow of reactive species that is separate from the plasma". As such, applicant's arguments rely upon a feature that is not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.<sup>1</sup> The mere fact that the annulus center of Zarowin's annular plasma comprises a reactive gas, is sufficient to satisfy the claimed limitation of "injecting a flow of a species into the annulus center of the annular plasma".

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allan Olsen whose telephone number is 571-272-1441. The examiner can normally be reached on M-F 1-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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<sup>1</sup> See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993)

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allan Olsen  
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Art Unit 1763